

**North American Computational Linguistics Open (NACLO) Guidebook for Student
Organizers**

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Basic Information

This guide contains information about hosting NACLO at a high school from the perspective of a student organizer. It is neither written nor endorsed by NACLO.

I. What is NACLO?

NACLO is an acronym for the North American Computational Linguistics Open. This competition is held annually at universities, colleges, and high schools throughout the United States and Canada. Participants compete individually to solve problems related to language, linguistics, and computer representation of language processes. Pattern recognition, problem solving, and logical reasoning are all used to solve the problems - no knowledge of linguistics or fluency in a language other than English is required.

Participating in NACLO can foster an interest in linguistics, computer science, as well as more broad interests in the world's many languages and cultures. Members of one high school club said that participating in NACLO increased their appreciation for languages, raised curiosity in related topics, and helped them learn more about linguistics. It is a great opportunity to be exposed to potential college and career paths while also having fun. For more information about what linguistics is, as well as possible related career paths, the Linguistic Society of America has more information on their website: <https://www.linguisticsociety.org/what-linguistics/>.

The competition is geared towards students aged 13-18, but students younger than 13 may participate with parent permission by emailing nacloinquiries@googlegroups.com, NOT through the normal registration process.

II. Guidebook Information

This Guidebook is written by a student organizer and is neither written nor endorsed by NACLO. It is meant to facilitate other students, teachers, and/or schools in the process of hosting

(and competing) in NACLO. All information is from personal experience and research, and as such the suggestions might not be relevant to all situations. For full information, visit the official NACLO website at nacloweb.org and the resources contained there. A good starting place is the Student Handbook, for students, or the Coordinator Handbook for those interested in hosting.

This project was done as part of a Girl Scout Gold Award. For more information on the Gold Award or Girl Scouts, visit:

<https://www.girlscouts.org/en/members/for-girl-scouts/badges-journeys-awards/highest-awards/gold-award.html>.

Registering

I. Getting Permission

Below is an email template for potential hosts and/or organizers to receive permission from higher ups in order to be a test site:

Dear _____,

I would like to hold the North American Computational Linguistics Open Competition (NACLO) here at our school this year. In this competition students use their logical reasoning, problem solving, and pattern recognition skills to solve problems related to language, linguistics, and how computers represent these concepts. Should participants do well in this Open competition, they may be invited to compete in the Invitational round. If students do very well in this round, there is a chance for them to advance to the national level and compete for Team USA in the International Linguistics Olympiad (IOL).

I have outlined the important details below, as well as attached the Coordinator Handbook for any additional information.

The test is ____date____, from ____ AM to ____ PM. Due to testing requirements this is the duration of the actual test, so the procedural reading would need to be done before this.

A room would need to be reserved for the test, probably from around ____ AM to ____ PM.

The test proctor would need to be signed into Piazza to communicate with the Jury while the test is going on.

Our school would need to be registered as a host site. This can be done here:

https://www.nacloweb.org/register_highsite.php

The proctor would need to register as a host. They can do that here:

https://www.nacloweb.org/register_highhost.php

There is no cost associated with this event, although printing and scanning test booklets will be required.

I have attached the coordinator handbook below for more details and clarifications.

Please let me know if you have any questions, and thank you again for considering this.

Sincerely,

II. Host Site Registration

Registration generally opens in late September. To register a high school as a host site, fill out the form at the following link: https://www.nacloweb.org/register_highsite.php. Note that the website information is not required.

When filling out the site registration form, a testing capacity number is required. This is the maximum number of students that are allowed to take the test at that site. It can be helpful to already have an idea of how many students would like to test, so that an accurate capacity can be entered. If this is not possible, talk to the sponsor or proctor to estimate a reasonable number. If the testing capacity is large enough, multiple rooms or proctors may be required.

Shortly after the registration form is filled out, the high school will be available for students to register under.

The deadline to register a host site is roughly a week before the open competition occurs, however registering as soon as possible would be best, allowing the most number of students to participate.

III. Proctor Registration

Proctor registration is quite similar to both host site and student registration, and generally opens in late September. The adult who will be proctoring the test should fill out the form found here: https://www.nacloweb.org/register_highhost.php. Note that a phone number is not required.

While there is no listed deadline for a proctor registration, registering at the time a host site is registered is the best way to avoid any confusion.

IV. Student Registration

Student registration can be done at the following link: https://www.nacloweb.org/register_student.php. Note that there are questions with suggested information, but not all of the questions are required.

The registration deadline for students is very close to the test, often just a few days before. However, it is highly recommended that students register earlier so as many people as possible have access to the test site and that all of the corresponding materials can be prepared accordingly. Certain test sites will have on-site registration available, but this is on a site specific basis. When registering in advance, make sure that your testing site is available from the drop down site menu. Registration generally opens in late September.

Training

NACLO can be done without any training or preparation. However, hosting practice sessions or training can allow participants to be more engaged and perform better in the competition, as well as be a fun activity extending beyond the limited competition time.

In addition, NACLO style problems can be a fun class activity. Meeting plans can be adapted to serve for class periods instead of club meetings.

I. Material Covered

NACLO identifies, in the various handbooks, seven main types of problems. The main ones are, following the handbook: translation problems, number problems, writing systems, calendar systems, formal problems, phonological problems, and computational problems. The Calendar system ones have appeared less frequently than the other types in past NACLO competitions. Other less frequent types include more specific ideas, such as the NACLO suggested deciphering kinship systems, transcribing spoken dialogue, associating sentences with images, translating unknown languages from scratch, and many other types of problems.

For the most extensive preparation for the NACLO competitions, as many problem types should be reviewed as possible. However, it can also be important to pay close attention to the problem types that occur the most frequently, which past year's competitions show to be translation problems followed by computational problems.

II. Meeting Plans

The following meeting plans are outlined to be around 1 hour each, but can be modified for different time availability. They assume a 15 week schedule, meeting once a week. All plans are able to be done individually or out of order, if desired. Specific problems are referenced to provide ideas to club leaders and student organizers, but there are many examples of the types of

problems that can also be used. Additionally, problems may belong to more than one problem type or not be a clear example of one in particular. The problems referenced in the following plans may as such not be exactly “correct”, but should nevertheless provide skill development in the intended area. Solutions to the problems should also be addressed if possible to provide tips for testing and doing the problem types in the future.

All of the past problems can be found at the NACLO website under past competitions: https://www.nacloweb.org/practice.php#previous_problems. Most of the ones included in the lesson plans below are from earlier years of the competition, allowing students and club leaders to use more recent competitions for their full test practices or personal practice. If desired, more problems and preparation materials can be found at the NACLO website (nacloweb.org) and at the IOL (International Linguistics Olympiad) website: <https://ioling.org/>.

1. Basics, NACLO intro, basic types of problems

- a. Plan future meeting times
- b. What the competition is/important dates
- c. Main types of problems and examples
- d. 2010 (K) F U Cn Rd Ths:

<https://www.nacloweb.org/resources/problems/2010/K.pdf>

2. Translation problems

- a. 2010 (B) Say it in Abma:

<https://www.nacloweb.org/resources/problems/2010/B.pdf>

- b. 2011 (B) Mix Up on the Farm:

<https://www.nacloweb.org/resources/problems/2011/B.pdf>

- c. 2011 (F) Tiger Tale: <https://www.nacloweb.org/resources/problems/2011/F.pdf>

3. Writing Systems

- a. 2007 (D) Hmong:

<https://www.nacloweb.org/resources/problems/2007/N2007-D.pdf>.

- b. 2010 (P) Khipu: <https://www.nacloweb.org/resources/problems/2010/P.pdf>.

- c. 2009 (A) Tenji karaoke:

<https://www.nacloweb.org/resources/problems/2009/N2009-A.pdf>.

4. Number Systems

- a. 2012 (H) Waorani Numbers:

<https://www.nacloweb.org/resources/problems/2012/N2012-H.pdf>.

- b. 2012 (P) Jeg kan tælle:

<https://www.nacloweb.org/resources/problems/2012/N2012-P.pdf>.

- c. 2011 (H) Counting in Irish:

<https://www.nacloweb.org/resources/problems/2011/H.pdf>.

5. Syntax trees/General linguistic concepts

- a. Unzippable example, discuss morphemes

- b. 2008 (F) Fake papershelfmaker:

<https://www.nacloweb.org/resources/problems/2008/N2008-F.pdf>.

- c. 2010 (I) Dogs and cats on trees:

<https://www.nacloweb.org/resources/problems/2010/I.pdf>.

6. Phonological

- a. IPA chart/intros (Crash Course Linguistics could be a good resource)

- b. 2009 (C) Letters for Cuzco:

<https://www.nacloweb.org/resources/problems/2009/N2009-C.pdf>.

- c. 2012 (E) Traevölörs Freisbuk:
<https://www.nacloweb.org/resources/problems/2012/N2012-E.pdf>
- 7. Computational problems
 - a. 2008 (H) Thorny Stems:
<https://www.nacloweb.org/resources/problems/2008/N2008-H.pdf>
 - b. 2009 (B) Nok-nok!:
<https://www.nacloweb.org/resources/problems/2009/N2009-B.pdf>
 - c. 2011 (E) BrokEnglish!:
<https://www.nacloweb.org/resources/problems/2011/E.pdf>
- 8. Formal problems
 - a. 2009 (M) Orwellspeak:
<https://www.nacloweb.org/resources/problems/2009/N2009-M.pdf>
 - b. 2011 (G) Ulwa Possessives:
<https://www.nacloweb.org/resources/problems/2011/G.pdf>
 - c. 2012 (J) Ik heb voorspeld:
<https://www.nacloweb.org/resources/problems/2012/N2012-J.pdf>
- 9. Practice Test (2020)
- 10. Test review, questions
- 11. Requests for problem types (if none, more Computational problems)
- 12. Practice Test (2021)
- 13. Requests for problem types (if none, more translation problems)
- 14. Test strategies, final questions, past test broad overviews
- 15. Practice Test (2022) and/or final general preparation

Hosting

I. Preparation

To make the preparation process easier, a checklist of steps and supplies that are able to be done in advance is included below. Items/tasks that are italicized are optional. All of the tasks can be done by the host school, but some may also be provided by test takers, or assisted by student organizers. This list is not exhaustive, and there are key day-of procedures that are listed in the Coordinator Handbook (available at nacloweb.org) that MUST be completed.

- Room reserved with capacity for all testers and a proctor
- Computer with capabilities for Piazza, logged into as/for the proctor
- Certify the host site (two days before competition)
- Test booklets printed, single sided, and organized (day before the competition)
- Extra paper (provided by the host site only)
- Black pens for booklet responses
- Pencils for scratchwork
- Refreshments*
- Clock or basic wristwatch*

II. Post Test

After the test, NACLO judges will be grading submitted packets. Emailed updates will release information to participants, most importantly when the scores will be released. When the scores have been released, they are able to be checked via logging into the student's NACLO account and looking at the results there.

If a student scored high enough to progress in the competition and compete in the invitational round, a similar process can be expected, although the questions will be varied to

normally include more questions, as well as more challenging questions. Information for the Invitational Round is released on the NACLO website every year.